

I claim:

1. A thermopile IR detector package structure comprising:
 - a detector having a substrate with thermoelectric components formed thereon;
 - and
 - 5 an encapsulation formed by etching a cavity in a silicon substrate, said encapsulation being installed on said substrate of said detector to seal said thermoelectric components thereon.
2. The thermopile IR detector package structure as claimed in claim 1, wherein said detector comprises:
 - 10 said substrate having a cavity portion;
 - a thin-film float board located above said cavity portion;
 - a plurality of thermoelectric components formed on said thin-film float board;
 - an insulating layer located above said thermoelectric components; and
 - 15 a blackbody radiation absorbing layer covering on said insulating layer.
3. The thermopile IR detector package structure as claimed in claim 2, wherein said thin-film float board is an insulating structure composed of more than one layer of thin film, and is preferably made of silicon oxide and silicon nitride.
- 20 4. The thermopile IR detector package structure as claimed in claim 1, wherein an antireflection multi-layer film is further provided on inner and outer surfaces of said encapsulation.
5. The thermopile IR detector package structure as claimed in claim 1, wherein a metal shield layer is coated on the outer surface of said encapsulation.

6. The thermopile IR detector package structure as claimed in claim 5, wherein the size of said metal shield layer can be exploited to control the field of view of said detector.
7. The thermopile IR detector package structure as claimed in claim 1, wherein
5 the size and etch depth of said encapsulation can be exploited to control the field of view of said detector.
8. The thermopile IR detector package structure as claimed in claim 1, wherein a pit is etched in said silicon substrate by means of silicon anisotropic etching technique.
- 10 9. The thermopile IR detector package structure as claimed in claim 1, wherein a pit is etched in said silicon substrate by means of silicon isotropic etching technique.
10. The thermopile IR detector package structure as claimed in claim 1, wherein said encapsulation makes use of mold, solder or low-temperature
15 glass to seal said detector.
11. The thermopile IR detector package structure as claimed in claim 1, wherein a carrier substrate is further provided below said substrate of said detector, and a plurality of external conducting contacts are formed thereon to form a surface mount device.
- 20 12. The thermopile IR detector package structure as claimed in claim 11, wherein said carrier substrate is an alumina substrate or a printed circuit board.
13. The thermopile IR detector package structure as claimed in claim 11 or 12, wherein a thermo-sensitive resistor or a diode can further be provided on

said carrier substrate for temperature measurement of the main body.

14. The thermopile IR detector package structure as claimed in claim 11,
wherein said external conducting contacts are solders, solder pins or solder
balls.

5 15. The thermopile IR detector package structure as claimed in claim 1,
wherein said detector can be directly packaged onto a circuit board.